



Power Tools

PM-1908

Date: 9-22-58

WALKER-TURNER 20" DRILL PRESS

HAND AND POWER FEED MODELS

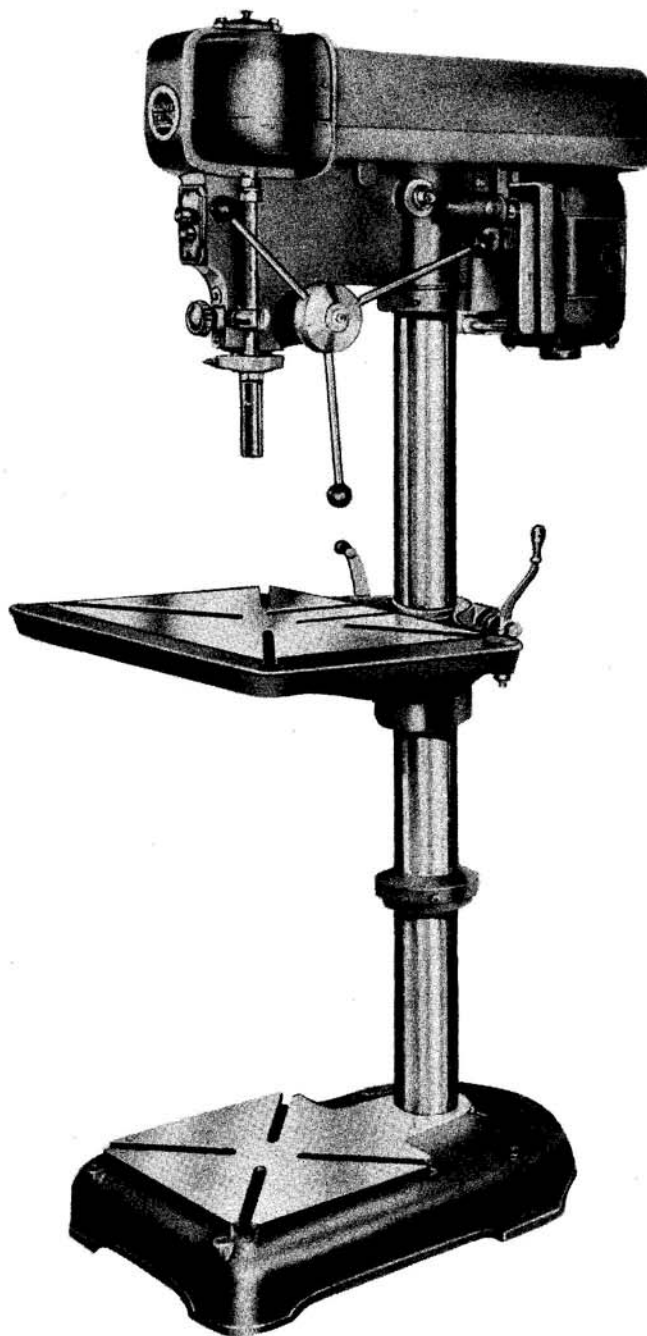
The Walker-Turner 20" Drill Press is packed set-up with the exception of the belt guard and motor. In the case of multiple spindle models, the legs are not attached to the table, they are packed separately.

Multiple Spindle Models: To assemble the legs to multiple spindle models, carefully support machine on wooden horses or other temporary supports and bolt legs securely into position. The tables of multiple spindle models should be carefully leveled. Use a precision level on the table and place wedges under legs of the machine where required. Riser blocks, Cat. No. 109C867-22, one or two sets per leg may be used if it is desired to have the table two or four inches higher.

Motors: (all models) Remove motor plate from machine and attach to motor with bolts furnished, tighten finger tight only until motor is aligned. Motor with built in switches should be installed so that the switch is on the left hand side as you face the machine. Replace motor plate with motor to drill press head and line up motor so that motor shaft is in true vertical position to drill press column. After motor has been lined up vertically, fasten securely to motor plate. Place motor pulley on motor shaft, with the largest step at the top and align it with spindle pulley, after which, tighten pulley securely to motor shaft with set screw. It is important that correct alignment be obtained between pulleys as belt life will be shortened if misalignment is present.

The motor should turn in a clockwise direction when viewed from the top of the motor when installed. If motor turns the wrong way, reverse its rotation in accordance with the directions on motor nameplate.

Motors recommended for this machine are 1725 and 1140 RPM. Speeds available through the step pulley are: with 1725 RPM motor—500, 800, 1200, 1800, and 2600 RPM; with 1140 RPM motor—330, 520, 800, 1200, and 1700 RPM.



Belts: On all models, motor to spindle belt can be changed as follows:

1. Raise cover on left hand side of belt guard.
2. Release tension on motor bracket by moving handle (A) Fig. 2, on left side of motor bracket towards front of head.
3. Remove the screws that hold top bearing holder and remove holder. This will provide clearance between pulley and head casting.
4. Remove and replace belt.
5. Replace bearing holder.
6. Move handle on motor bracket towards rear to place tension on belt.
7. Lower cover on belt guard.

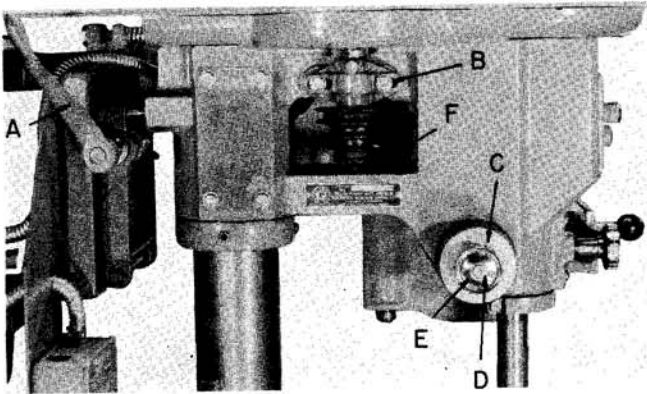


FIGURE 2

Adjusting Spindle Return Spring: For the purpose of automatically returning spindle upward after a hole has been drilled, a spring is provided enclosed in a case and is located on the left side of drill press head, see (C) Fig. 2. This spring has been properly adjusted at the factory and this adjustment should not be disturbed unless absolutely necessary. If it should become necessary to adjust it, proceed as follows:

1. Back off cap screw (D) Fig. 2.
2. Back off nut (E).
3. With a firm hold on spring housing, disen-

gage it from pin on drill press head and turn it counterclockwise to increase tension and clockwise to decrease tension. Be sure pin is again engaged before releasing grip on the spring housing.

4. Retighten nut and cap screw.

The tension of the spring can be tested by turning pilot wheel counterclockwise. Be sure quill is not locked when testing.

A depth vernier is located next to the spring housing. Each division line is equal to 1/32 inch spindle travel. To set the vernier, loosen nut and turn vernier until zero mark matches a line on the spring housing and retighten nut. Hole can then be drilled to exact depth.

Changing Spindles: To change spindle for any reason, proceed as follows:

1. Remove stop rod from stop collar.
2. Lower table to allow sufficient space between table and head to remove spindle and quill.
3. Holding quill with left hand, turn pilot wheel counterclockwise until quill assembly is disengaged from pinion shaft.
4. Remove quill and spindle assembly.
5. Be careful when releasing pilot wheel, because of spring tension on wheel, turn slowly in clockwise direction until all tension is out of spring. Count the number of turns it takes to release spring tension.
6. Loosen the two set screws in collar on spline end of spindle and remove.
7. With a hard rubber mallet, tap spline end of spindle, spindle with bearing and flinger collar will come out of quill.
8. Using an arbor press, remove bearing and flinger collar from spindle.

To replace spindle, reverse above procedure. Be sure bearing and flinger collar have been pressed tight against shoulder on spindle before replacing in quill.

After replacing collar with set screws on spindle be sure there is no end play between spindle and quill. Play is eliminated by seating both bearings in quill.

Before replacing quill in drill press head, turn pilot wheel counterclockwise the same number of turns it took to release spring tension, then replace spindle and quill. Rotate spindle if necessary, to engage spline in pulley.

After assembly of quill and spindle has been completed, if further spring tension is needed, adjust return spring as outlined above under "Adjusting spindle return spring."

Replace stop rod on stop collar.

Adjustment to Compensate for Wear between Quill and head: After considerable use, play may develop between quill and drill press head due to wear.

To adjust:

1. Remove the two screws and washers, (G) Fig. 3.
2. Tighten quill lock screws against plugs. It will not be necessary to tighten these screws too much.
3. Turn pilot wheel to test movement of quill and play. If there is a slight "drag", quill lock screws have been adjusted too tight, back off lock screws with very little turn.
4. If quill still has play, turn lock screws slightly tighter.
5. After proper adjustment has been made, replace screws and washers.

Drilling Holes to Depth: On the right side of the drill press head is a stop rod which is mounted in a collar that clamps on the bottom end of the quill. Lower the quill to the desired depth of hole and lock in this position. Run the lower nut (D), Fig. 3 down against the stop. Raise quill to lift the nut off the stop and bring the upper nut (E) down and tighten it firmly against the lower nut. This will permit equal depth of drilling when more than one hole is to be drilled to the same depth.

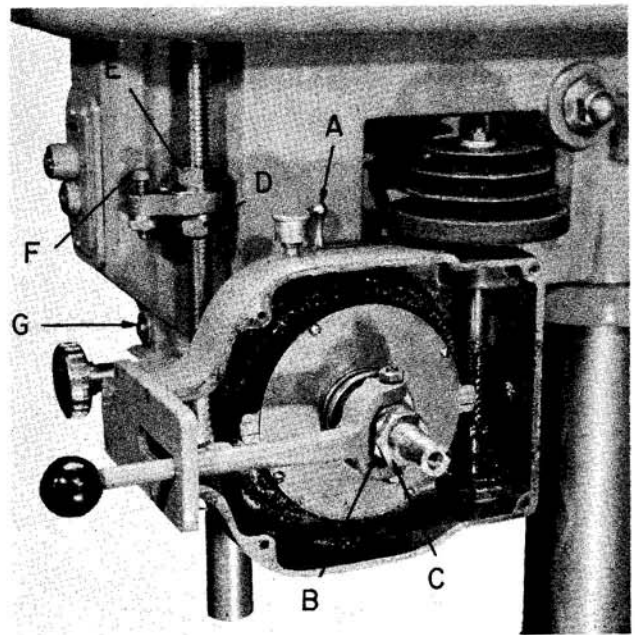


FIGURE 3

On power feed models the stop rod has a micro-adjusting stop. The screw (F) Fig. 3, in the feed stop is adjusted for fine depth setting after the nuts have been set as described above. After screw (F) in feed stop has been adjusted, lock in place with knurled lock nut.

Elevating Unit: All models are furnished with a rack and pinion type elevating unit. The single spindle floor models use the unit in conjunction with the table, and all other models have it attached to the head. The elevating unit is interchangeable and may be used on either head or table of the single spindle floor model, or in both head and table if an extra raising mechanism is purchased as an accessory.

POWER FEED MODELS

The power feed assembly, consisting of clutch housing, belt tensioner and countershaft assembly, provides four rates of spindle feeds. The four rates of feed, .004, .006, .009 and .012 inches per revolution of spindle provide correct feed rate for any size drill within the capacity of the machine.

Belts: Upper power feed belt, (not shown in photo), is changed as follows:

1. Remove motor to spindle belt

2. Loosen two cap screws (B) Fig. 2 that hold countershaft assembly bracket.
3. Move bracket towards front of head.
4. Rotate spindle pulley clockwise and remove belt from single groove pulley on countershaft.
5. Move belt over large step of spindle pulley, then between head casting and pulley.
6. Remove and replace belt.
7. Move countershaft assembly bracket towards rear of head to tighten belt.
8. Tighten cap screws securely.
9. Replace belt on motor and spindle pulleys and replace bearing holder and screws.
10. Move handle on motor bracket towards rear to place tension on belt.
11. Lower cover on belt guard.

Lower power feed drive belt (F) Fig. 2 can be changed by releasing pressure on belt tensioner by moving handle (A) Fig. 3 on tensioner toward rear.

Clutch Adjustment: The clutch used on 20" drill press power feeds is of the multiple disc type and will be found to be extremely sensitive in operation. It may be adjusted to slip under any predetermined load to minimize breakage of small drills, or be positive in its action for regular or large hole drilling. Adjustments are made by first removing the pilot wheel and clutch housing cover. The adjusting nut (B) and lock nut (C), Fig. 3 are used to make the adjustment. Turning in or clockwise will increase the holding pressure, while turning it out will decrease it. This adjustment is extremely sensitive, do not turn the adjusting nut more than 1/8 turn at any time without checking engaging lever. If nut is drawn up too tight, it will not be possible to engage the clutch.

Be sure to tighten lock nut securely after adjustment is made. The clutch is properly adjusted at the factory for positive action and usually need not be adjusted by the user, except to compensate for wear after long use, or when maximum torque is to be set to guard against breaking small drills.

After proper adjustment has been made, replace clutch housing and pilot wheel.

LUBRICATION

Spindle: Ball oiler in top bearing cap; medium machine oil. Oil sparingly, just enough to lubricate spline on spindle and insert in pulley. Too much oil will cause the grease to be flushed out of bearing.

Lubricate the elevating crank bearing occasionally with light oil. The gears are packed in grease at the factory and should not require any further lubrication until the unit is removed from the machine. The elevating unit support collar is equipped with ball bearings and should be lubricated occasionally. A few drops of oil applied to the collar at the periphery of the column will suffice.

Power Feed: Countershaft bearing— oil cup, fill oil cup once a week.

Power Feed: Feed Gear— grease cup, one or two turns of grease cup daily when feed is used.

Power Feed: Worm Shaft— ball oiler, medium machine oil, once a week.

Power Feed: On Clutch Housing next to Head— medium machine oil once a week.

Power Feed: On Clutch Housing near Pilot Wheel— medium machine oil once a week.

Feed Pinion Shaft: Right Side— Oil 5 drops daily.

Feed Pinion Shaft: Left Side— oil, 5 drops daily, between spring housing.

Spindle Return Clock Spring: Spring— Remove housing with spring and squirt light machine oil in spring about every six months.

Motor Bearing: Motor bearings are grease sealed for life and need no further lubrication.

DO NOT USE OIL ON MOTOR.

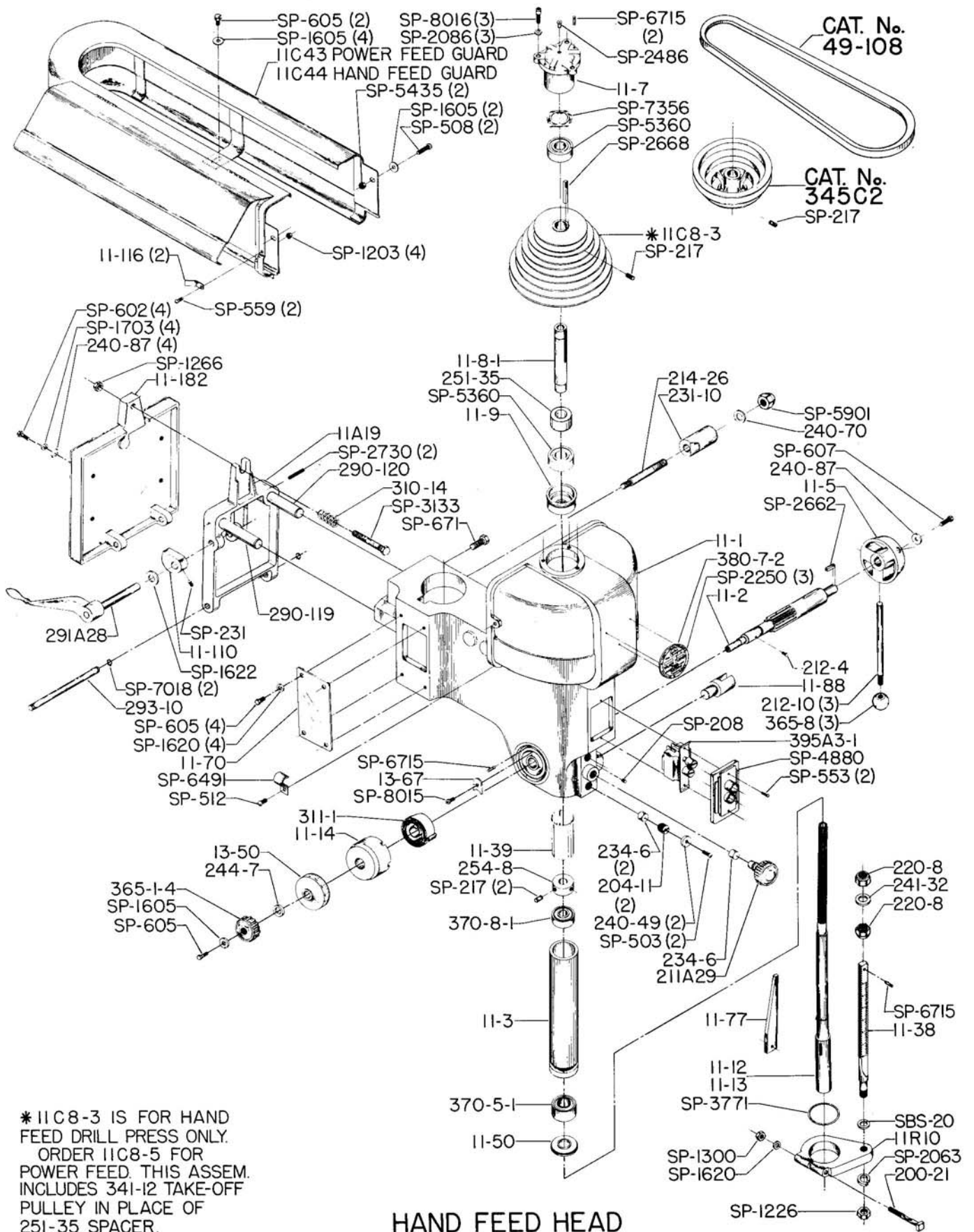
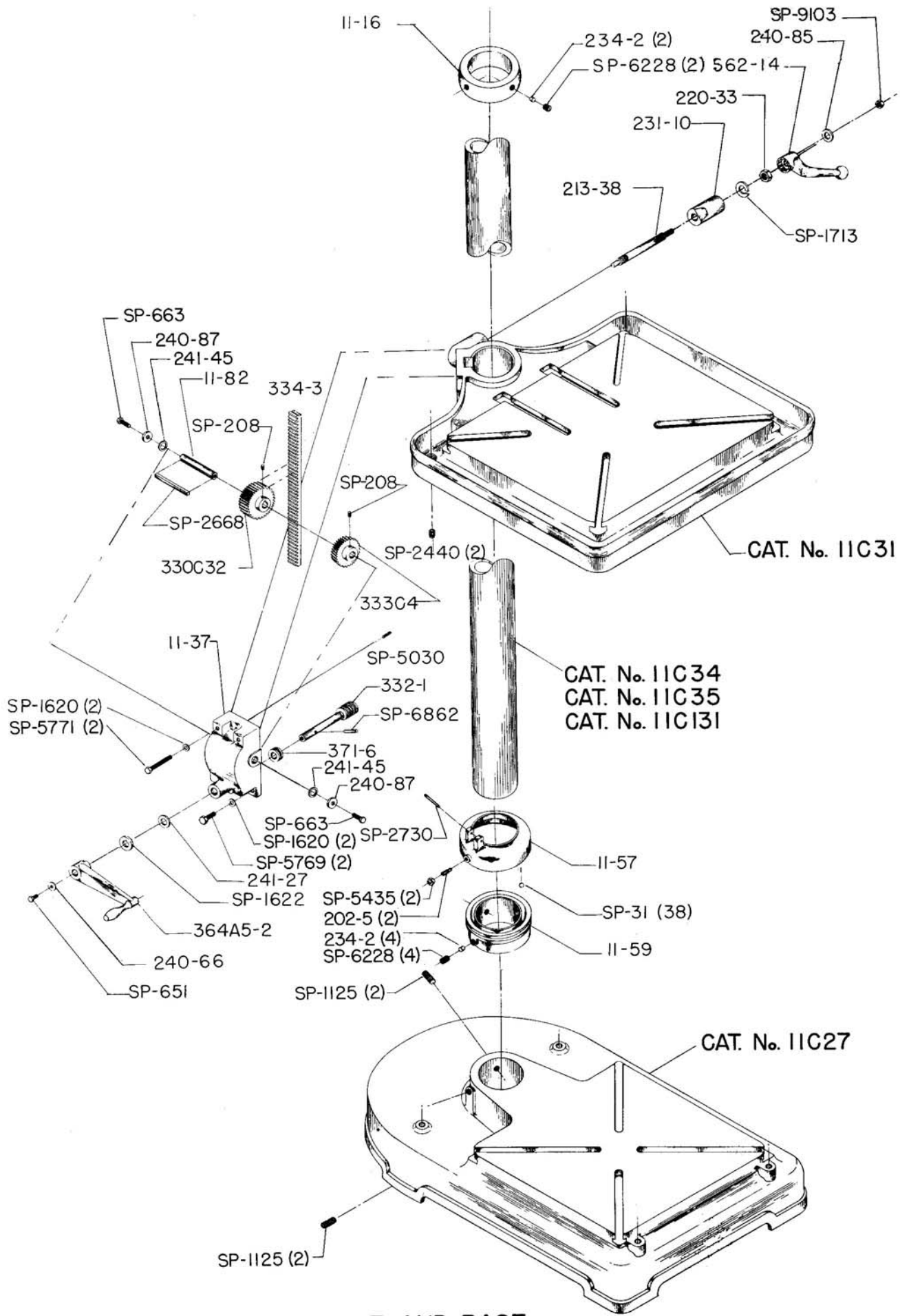
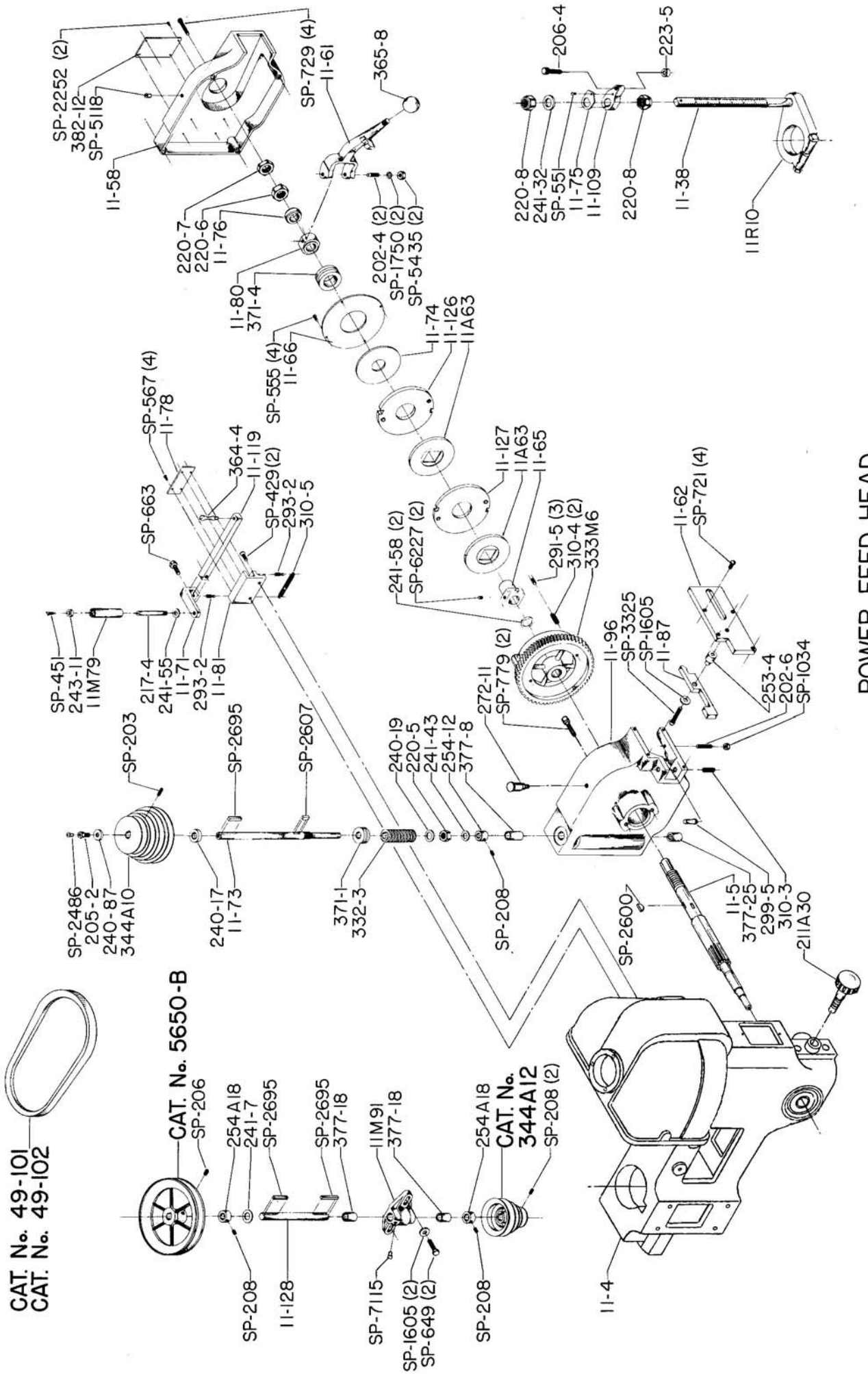


FIGURE 4



COLUMN, TABLE AND BASE

FIGURE 5



POWER FEED HEAD

FIGURE 6

(PM-1908) PARTS LIST

Part No.	Description
HAND FEED HEAD (Fig. 4)	
11-1	Head
11-2	Pinion
11-3	Rack
11-7	Top Bearing Holder
11C8-3	Pulley, Hand Feed, Including:
11-8-1	Insert
251-35	Pulley Bearing Spacer
SP-217	5/16-18 x 1/2" Set Screw, C. Point
SP-2668	3/16 x 3/16 x 1 3/4" Straight Key
11-9	Bearing Holder
11R10	Depth Gage, Including:
200-21	Clamp Bolt
SP-1300	5/16-18" Hex. Nut
SP-1620	5/16" Washer
11-12	Spindle, No. 2 M.T.
11-13	Spindle, No. 3 M.T.
11-14	Spring Housing
11-15	Hub
11A19	Plate, Including:
290-119	Short Pin
290-120	Long Pin
SP-2730	3/16" x 1 1/2" Roll Pin
11-38	Depth Gage
11-39	Oil Guard Sleeve
11-50	Flinger Collar
11-70	Plate
11-77	Drift Pin
11-88	Guide, Depth Gage
11-110	Cam, Motor Mount
11-116	Door Latch
11-182	Motor Base
13-50	Vernier Depth
13-67	Pinion Retainer
204-11	Screw, Quill Lock
211A29	Stud
212-4	Spring Pin
212-10	Spoke
214-26	Stud
220-8	Nut
231-10	Block, Lock
234-6	Plug
240-49	Washer
240-70	Washer
240-87	Washer
241-32	Washer, Fiber
244-7	"D" Washer
254-8	Collar
291A28	Shaft and Handle
293-10	Base Hinge Pin
310-14	Spring
311-1	Spring
365-1-4	Hand Knob
365-8	Knob
370-5-1	Lower Bearing
370-8-1	Upper Bearing
380-7-2	Name Plate
395A3-1	Switch
SBS-20	5/8" Washer
SP-208	1/4-20 x 1/4" Set Screw
SP-217	5/16-18 x 1/2" Set Screw Cup Point
SP-231	5/16-18 x 3/8" Set Screw
SP-503	1/4-20 x 5/8" Rd. Hd. Screw

Part No.	Description
SP-508	5/16-18 x 1" Rd. Hd. Screw
SP-512	5/16-18 x 1/2" Rd. Hd. Screw
SP-553	No. 6-32 x 1/2" Rd. Hd. Screw
SP-559	No. 10-32 x 1/2" Rd. Hd. Screw
SP-602	5/16-18 x 1 1/4" Hex. Hd. Cap Screw
SP-605	5/16-18 x 1/2" Hex. Hd. Cap Screw
SP-607	5/16-18 x 3/4" Hex. Hd. Cap Screw
SP-671	1/2-20 x 1" Hex. Hd. Cap Screw
SP-1203	No. 10-32" Hex. Nut
SP-1226	5/8-18" Hex. Jam Nut
SP-1266	1/2-13" Hex. Jam Nut
SP-1605	5/16" Washer
SP-1620	5/16" Washer
SP-1622	5/8" Washer
SP-1703	5/16" Lockwasher
SP-2063	5/8" Lockwasher
SP-2086	5/16" Lockwasher
SP-2250	No. 4 x 3/16" Drive Screw
SP-2486	Oiler
SP-2662	3/16 x 3/16 x 3/4" Straight Key
SP-3133	1/2-13 x 3" Hex. Hd. Screw
SP-3771	Gasket
SP-4880	Switch Cover Plate
SP-5360	Bearing
SP-5435	5/16-18" Hex. Jam Nut
SP-5901	5/8-18" Hex. Acorn Nut
SP-6491	Cable Clip
SP-6715	3/16 x 5/8" Roll Pin
SP-7018	Snap Ring
SP-7356	Bearing Spring
SP-8015	Button Head Soc. Cap Screw
SP-8016	Button Head Soc. Cap Screw
No. 11C43	Guard, Power Feed
No. 11C44	Guard, Hand Feed
Cat. No. 345C2	Pulley
Cat. No. 49-108	V-Belt, 62.4 O.C.

COLUMN, TABLE AND BASE (Fig. 5)

11-16	Collar, Stop
11-37	Housing
11-57	Thrust Bearing
11-59	Thrust Bearing
11-82	Shaft
202-5	Guide Screw
213-38	Locking Stud
220-33	Nut
231-10	Block, Lock
234-2	Plug
240-66	Washer
240-85	Washer
240-87	Washer
241-27	Washer, Fiber
241-45	Washer
330C32	Gear, Including:
SP-208	1/4-20 x 1/4" Set Screw
332-1	Worm Gear
333C4	Gear, Including:
SP-208	1/4-20 x 1/4" Set Screw
334-3	Rack
362-14	Handle
364A5-2	Crank
371-6	Bearing, Thrust
SP-31	Ball Bearing Balls

PARTS LIST (Continued)

Part No.	Description	Part No.	Description
SP-651	1/4-28 x 1/2" Hex. Hd. Cap Screw	220-7	Nut, Lock
SP-663	5/16-24 x 3/4" Hex. Hd. Cap Screw	220-8	Nut, Adjusting
SP-1125	1/2-13 x 1" Set Screw	223-5	Nut, Lock
SP-1620	5/16" Washer	240-17	Collar
SP-1622	Washer	240-19	Washer
SP-1713	5/16" Lockwasher	240-87	Washer
SP-2440	3/4" Pipe Plug	241-7	5/8" Bakelite Washer
SP-2668	3/16 x 3/16 x 1 3/4" Straight Key	241-32	Washer, Fiber
SP-2730	3/16 x 1 1/2" Roll Pin	241-43	Washer, Fiber
SP-5030	3/16 x 3/4" Groove Pin	241-55	Washer, Bakelite
SP-5435	5/16-18" Hex. Jam Nut	241-58	Washer, Fiber
SP-5769	5/16-24 x 1" Hex. Hd. Screw	243-11	Washer
SP-5771	5/16-24 x 2 1/4" Hex. Hd. Cap Screw	253-4	Release Lever Spacer
SP-6228	1/2-13 x 1/2" Set Screw, Flat Point	254-12	Collar
SP-6862	1/4 x 1" Groove Pin	254A18	Collar, Including:
SP-9103	5/8-11" Nut		SP-208 1/4-20 x 1/4" Set Screw
Cat. No. 11C27	Base	272-11	Grease Cup
Cat. No. 11C31	Production Table	291-5	Pin
Cat. No. 11C34	Column, 3 3/4 x 42"	293-2	Spring Pin
Cat. No. 11C35	Column, 3 3/4 x 66"	299-5	Pin, Clutch Release
Cat. No. 11C131	Column, 3 3/4 x 78"	310-3	Spring
		310-4	Spring
		310-5	Tension Spring
		332-3	Worm Gear
		333M6	Worm Gear
		364-4	Handle
		365-8	Knob
		371-1	Bearing, Thrust
		371-4	Bearing, Thrust
		377-8	Bearing, Oil-less
		377-25	Bushing
		382-12	Speed Chart
		SP-203	1/4-20 x 3/8" Set Screw, Flat Point
		SP-206	5/16-18 x 5/16" Set Screw
		SP-208	1/4-20 x 1/4" Set Screw
		SP-429	1/4-28 x 1/2" Flat Hd. Screw
		SP-451	No. 10-32 x 3/8" Flat Hd. Screw
		SP-551	No. 10-32 x 1/4" Rd. Hd. Screw
		SP-555	No. 8-32 x 3/8" Rd. Hd. Screw
		SP-567	No. 6-32 x 1/4" Rd. Hd. Screw
		SP-649	5/16-18 x 1" Hex. Hd. Cap Screw
		SP-663	5/16-24 x 3/4" Hex. Hd. Cap Screw
		SP-721	No. 10-32 x 1/2" Fil. Hd. Screw
		SP-729	1/4-20 x 1 1/4" Fil. Hd. Screw
		SP-779	5/16-18 x 1 1/2" Hex. Socket Hd. Cap Screw
		SP-1034	1/4-20" Hex. Nut
		SP-1605	5/16" Flat Washer
		SP-1750	5/16" Int. Shakeproof Washer
		SP-2252	No. 2 x 3/16" Drive Screw
		SP-2486	Oiler
		SP-2600	Woodruff Key
		SP-2607	Woodruff Key
		SP-2695	Key
		SP-3325	5/16-24 x 1 1/4" Soc. Hd. Screw
		SP-5118	Oil Cup
		SP-5435	5/16-18" Hex. Jam Nut
		SP-6227	1/4-20 x 3/16" Set Screw Cup Point
		SP-7115	Oil Cup
		Cat. No. 344A10	Pulley
		Cat. No. 344A12	Pulley
		Cat. No. 5650-B	Pulley
		Cat. No. 49-101	V-Belt, 29 1/8" O.C.
		Cat. No. 49-102	V-Belt, 24" O.C.
11-4	Head		
11-5	Pinion		
11R10	Depth Gage, Including:		
	200-21 Clamp Bolt		
	SP-1300 5/16-18" Hex. Nut		
	SP-1620 5/16" Washer		
11-38	Depth Gage		
11-58	Cover		
11-61	Clutch Lever		
11-62	Front Cover Plate		
11A63	Clutch Disc (Set of 2)		
11-65	Block		
11-66	Plate		
11-71	Roller Bracket		
11-73	Shaft		
11-74	Disc, Thrust		
11-75	Feed Stop Lock Washer		
11-76	Thrust Collar		
11-78	Slide Retainer Plate		
11M79	Idler		
11-80	Thrust Collar		
11-81	Tension Bracket		
11-87	Release Lever		
11M91	Idler Bearing, Including:		
	377-18 Bushing		
11-96	Housing		
11-109	Feed Stop		
11-119	Slide Bar		
11-126	Disc, Pressure		
11-127	Disc, Clutch		
11-128	Countershaft Spindle		
202-4	Set Screw		
202-6	Screw, Adjusting		
205-2	Screw, Oil Cup		
206-4	Screw, Adjusting		
211A30	Stud		
217-4	Roller Stud		
220-5	Nut		
220-6	Nut, Adjusting		

POWER FEED HEAD (Fig. 6)



Power Tools

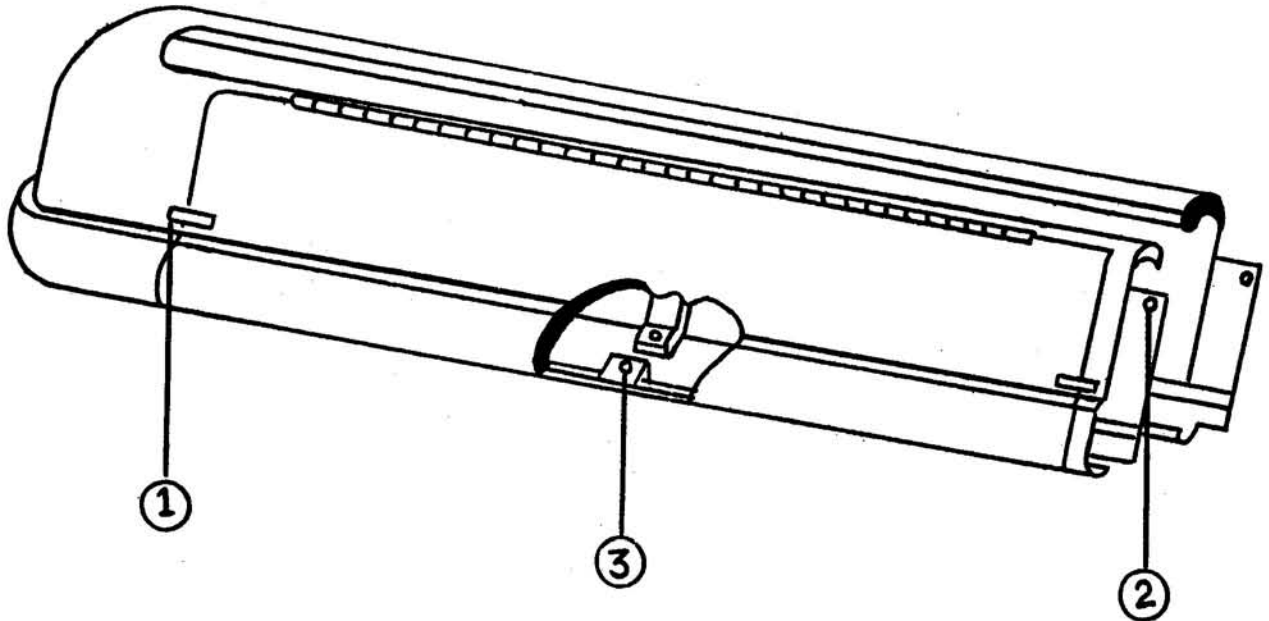
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Date: 10-22-57

INSTRUCTIONS FOR ASSEMBLY

of

Belt Guard for 20" Drill Press



1. Fasten door latches (11-116) with $10/32 \times 3/8$ " Rd. Hd. screws and double $10/32$ nuts. Set nuts so that latches fit snugly but not tight.
2. Mount guard to drill press head and fasten at front with $5/16 \times 1$ " Rd. Hd. screw, using flat washer and jam nut.
3. Fasten flat mounting tabs to rear of head with $5/16 \times 1/2$ " Hex Hd. screw, using flat washers.



WALKER-TURNER DIVISION

Rockwell MANUFACTURING COMPANY

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